



## INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

<b>(51) International Patent Classification:</b> <b>G06F 17/00</b>	<b>A2</b>	<b>(11) International Publication Number:</b> <b>WO 00/58862</b> <b>(43) International Publication Date:</b> 05 October 2000 (05.10.2000)
<b>(21) International Application Number:</b> PCT/US00/08343 <b>(22) International Filing Date:</b> 30 March 2000 (30.03.2000) <b>(30) Priority Data:</b> 09/282,158 31 March 1999 (31.03.1999) US <b>(60) Parent Application or Grant</b> FREEMARKETS, INC. [/]; (). KINNEY, Sam, E., Jr. [/]; (). RAGO, Vincent, F. [/]; (). STEVENS, Robert, G. [/]; (). BECKER, David, J. [/]; (). BERNARD, Anthony, F. [/]; (). RUPP, William, D. [/]; (). HECKMANN, Daniel, C. [/]; (). MEAKEM, Glen, T. [/]; (). MORGAN, LEWIS & BOCKUS LLP ; ().		<b>Published</b>
<b>(54) Title: METHOD AND SYSTEM FOR CONDUCTING ELECTRONIC AUCTIONS WITH MULTI-CURRENCY BIDDING</b> <b>(54) Titre: PROCEDE ET SYSTEME PERMETTANT D'ORGANISER DES ENCHERES ELECTRONIQUES AVEC OFFRES DANS DIVERSES DEVISES</b>  <b>(57) Abstract</b> <p>A method and system for conducting electronic online auctions using multi-currency bidding is disclosed. Each of the bidders can specify bids in their own distinct local currency. The originator of the auction compares the submitted bids in a base currency after the local currency bids are transformed from the local currency into the base currency. Each of the bidders views a relative comparison of bids in the context of their own local currency.</p> <b>(57) Abrégé</b> <p>Cette invention concerne un procédé et un système permettant d'organiser des enchères électroniques en ligne avec offres multi-devise. Chacun des enchérisseurs peut faire des offres spécifiques dans sa propre monnaie locale. L'organisateur des enchères comparent les offres soumises, après conversion dans une monnaie de base des offres faites dans les monnaies locales. Chacun des enchérisseurs peut procéder à une comparaison relatives des offres dans sa monnaie locale.</p>		

**PCT**WORLD INTELLECTUAL PROPERTY ORGANIZATION  
International Bureau

## INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification <sup>7</sup> : G06F 17/00	A2	(11) International Publication Number: WO 00/58862
		(43) International Publication Date: 5 October 2000 (05.10.00)

(21) International Application Number: PCT/US00/08343

(22) International Filing Date: 30 March 2000 (30.03.00)

(30) Priority Data:  
09/282,158 31 March 1999 (31.03.99) US

(71) Applicant: FREEMARKETS, INC. [US/US]; One Oliver Plaza, 210 Sixth Avenue, Pittsburgh, PA 15222 (US).

(72) Inventors: KINNEY, Sam, E., Jr.; 314 Maple Lane, Sewickley, PA 15143 (US). RAGO, Vincent, F.; 15 Roxbury Road, Pittsburgh, PA 15221 (US). STEVENS, Robert, G.; 5518 Ellsworth Avenue, Apartment 1, Pittsburgh, PA 15232 (US). BECKER, David, J.; 22 Sewickley Hills Drive, Sewickley, PA 15143 (US). BERNARD, Anthony, F.; 2518 Lindenwood Drive, Wexford, PA 15090 (US). RUPP, William, D.; 2151 Cayuga Drive, Pittsburgh, PA 15239 (US). HECKMANN, Daniel, C.; 4889 East Willock Road, Pittsburgh, PA 15227 (US). MEAKEM, Glen, T.; 703 Cochran Street, Sewickley, PA 15143 (US).

(74) Agent: MORGAN, LEWIS &amp; BOCKUS LLP; Boswell, Mary Jane, 1800 M Street, N.W., Washington, DC 20036-5869 (US).

(81) Designated States: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).

**Published***Without international search report and to be republished upon receipt of that report.*

(54) Title: METHOD AND SYSTEM FOR CONDUCTING ELECTRONIC AUCTIONS WITH MULTI-CURRENCY BIDDING

## (57) Abstract

A method and system for conducting electronic online auctions using multi-currency bidding is disclosed. Each of the bidders can specify bids in their own distinct local currency. The originator of the auction compares the submitted bids in a base currency after the local currency bids are transformed from the local currency into the base currency. Each of the bidders views a relative comparison of bids in the context of their own local currency.

**SUPPLIER B VIEW (GERMANY)**

BIDDER	BID TIME	BID
SUP A	02:03:38	DM 2,846,614
SUP B	02:06:47	DM 2,733,653
SUP C	02:10:09	DM 2,727,426
SUP A	02:18:29	DM 2,709,130

**FOR THE PURPOSES OF INFORMATION ONLY**

Codes used to identify States party to the PCT on the front pages of pamphlets publishing international applications under the PCT.

AL	Albania	ES	Spain	LS	Lesotho	SI	Slovenia
AM	Armenia	FI	Finland	LT	Lithuania	SK	Slovakia
AT	Austria	FR	France	LU	Luxembourg	SN	Senegal
AU	Australia	GA	Gabon	LV	Latvia	SZ	Swaziland
AZ	Azerbaijan	GB	United Kingdom	MC	Monaco	TD	Chad
BA	Bosnia and Herzegovina	GE	Georgia	MD	Republic of Moldova	TG	Togo
BB	Barbados	GH	Ghana	MG	Madagascar	TJ	Tajikistan
BE	Belgium	GN	Guinea	MK	The former Yugoslav Republic of Macedonia	TM	Turkmenistan
BF	Burkina Faso	GR	Greece	ML	Mali	TR	Turkey
BG	Bulgaria	HU	Hungary	MN	Mongolia	TT	Trinidad and Tobago
BJ	Benin	IE	Ireland	MR	Mauritania	UA	Ukraine
BR	Brazil	IL	Israel	MW	Malawi	UG	Uganda
BY	Belarus	IS	Iceland	MX	Mexico	US	United States of America
CA	Canada	IT	Italy	NE	Niger	UZ	Uzbekistan
CF	Central African Republic	JP	Japan	NL	Netherlands	VN	Viet Nam
CG	Congo	KE	Kenya	NO	Norway	YU	Yugoslavia
CH	Switzerland	KG	Kyrgyzstan	NZ	New Zealand	ZW	Zimbabwe
CI	Côte d'Ivoire	KP	Democratic People's Republic of Korea	PL	Poland		
CM	Cameroon	KR	Republic of Korea	PT	Portugal		
CN	China	KZ	Kazakhstan	RO	Romania		
CU	Cuba	LC	Saint Lucia	RU	Russian Federation		
CZ	Czech Republic	LI	Liechtenstein	SD	Sudan		
DE	Germany	LK	Sri Lanka	SE	Sweden		
DK	Denmark	LR	Liberia	SG	Singapore		
EE	Estonia						

**Description**

5

10

15

20

25

30

35

40

45

50

55

**METHOD AND SYSTEM FOR CONDUCTING ELECTRONIC AUCTIONS  
WITH MULTI-CURRENCY BIDDING**

**Background of the Invention**

The disclosed invention relates generally to conducting online electronic auctions, and in particular to online electronic auctions featuring multi-currency bidding.

***Traditional Procurement Models***

Procurement of supplies has traditionally involved high transaction costs, especially information search costs. The introduction of electronic commerce has introduced new methods of procurement that lower some of the transaction costs associated with procurement. Online procurement, or business-to-business electronic commerce, matches buyers and suppliers so that transactions can take place electronically. There are three models for online procurement: catalog, buyer-bidding auction, and supplier-bidding auction.

The "catalog" model of online procurement was the first to be developed. The first electronic catalogs were developed by suppliers to help customers obtain information about products and order supplies electronically. These first electronic catalogs were single-source; i.e. they only allowed customers to obtain information and products from that supplier.

However, customers are not typically satisfied with being "locked in" to one supplier - they wanted to be able to compare a number of competing products to be sure of getting the product features they wanted, at the best price. So suppliers with single-source electronic catalogs started to include competitors' products on their systems. An example of this is American's SABRE system, which includes offerings from competing suppliers (airlines), thereby further reducing information

5 search costs. By offering competing products, the electronic catalog that offers competitor's products becomes an "electronic market".

10 Many of these systems are biased towards the supplier offering the electronic market. Procurement costs can be further lowered with an unbiased  
5 electronic market that promotes competition.

15 For standard products and services, the need to have an unbiased market has been met for many industries by third party "market makers." For example, Inventory Locator Services has compiled a database that lists all airplane parts  
20 suppliers that have a certain item in stock. Buyers dial into the database to get information on the parts they need. Here, it is a third party, Inventory Locator  
10 Service, not a supplier, creating the unbiased electronic market.

25 The electronic catalog model of electronic commerce involves one buyer and one supplier at a time. When many buyers compete for the right to buy from one supplier, a buyer-bidding auction model is created. A noteworthy example of  
30 the buyer-bidding auction model is that operated by PriceLine.com and described in U.S. Pat. No. 5,794,207 issued to Walker et al. In this system, potential buyers  
15 compete for airline tickets by submitting a bid for an airline ticket on the PriceLine website, and airlines can choose to accept a bid, thereby committing the buyer to  
35 buy the ticket.

40 The catalog and buyer-bidding auction types of electronic markets do not work in some situations however. If the required product is custom made for the  
20 buyer, it is not possible for suppliers to publish a set price in advance for a catalog market. Likewise, it is not possible for buyers to specify all of the details of the  
45

5 product they want to purchase in a buyer-bidding auction. Traditionally, when a  
company requires a custom industrial product, procurement is made by a buyer for  
10 the company who searches for a potential supplier and acquires custom-tailored  
price quotes from a supplier for the needed custom product. The search is slow  
5 and somewhat random because it usually relies heavily on personal relationships.  
15 The costs associated with locating vendors, comparing their products, negotiating,  
and paperwork become big factors in a purchase decision. The cost of switching  
20 suppliers is very large, which means that the quoted price is probably not the  
lowest fair price and that it is hard for a new supplier to enter the market.

10 As an alternative, buyers use auctions to save money. The assignee of the  
25 present application developed a system wherein suppliers downwardly bid against  
one another to achieve the lowest market price in a supplier-bidding auction.

30 In a supplier-bidding auction, bid prices typically start high and move  
downward in reverse-auction format as suppliers interact to establish a closing  
15 price. The auction marketplace is one-sided, i.e. one buyer and many potential  
suppliers. Typically, the products being purchased are components or materials.  
35 "Components" typically mean fabricated tangible pieces or parts that become part  
of assemblies of durable products. Example components include gears, bearings,  
40 appliance shelves, or door handles. "Materials" typically mean bulk quantities of  
raw materials that are further transformed into product. Example materials include  
20 corn syrup or sheet steel.

45 Industrial buyers do not typically purchase one component at a time.  
Rather, they purchase whole families of similar components. At times, components

are strongly related to one another. As an example, a buyer might purchase a given plastic knob in two different colors, or might purchase a nameplate in four different languages. These parts are so similar that by definition they must be purchased from the same supplier - all of the knobs are made using the same mold. These items are therefore grouped into a single lot. Suppliers in industrial auctions must provide unit price quotes for all line items in a lot.

#### Auction Process

The process for a supplier-bidding auction is described below with reference to Figs. 1 and 2. Fig. 1 illustrates the functional elements and entities in a supplier-bidding auction, while Fig. 2 is a process diagram that identifies the tasks performed by each of the involved entities.

The supplier-bidding auction model requires that the bidding product or service be defined by the buyer 10. An auction coordinator 20 works with buyers 10 to prepare for and conduct an auction and to define the potentially new supply relationships resulting from the auction.

As shown in Fig. 2, in the Initial Contact phase 102 of the auction process, the coordinator 20 contacts the buyer 10, and the buyer 10 provides data to the coordinator 20. The coordinator 20 prepares a specification 50 for each desired product or part 52. Once the product 52 is defined, potential suppliers 30 for the product are identified. The coordinator 20 and buyer 10 work together to compile this list of potential suppliers from suppliers already known to the buyer 10 as well as suppliers recommended by the coordinator 20.



5

10

The buyer 10 makes a decision regarding which potential suppliers 30 will receive invitations to the upcoming Auction. Suppliers 30 that accept Auction invitations are then sent notices regarding the upcoming Auction, as well as client software to install in preparation of participating in the Auction.

15

20

5 In the RFQ phase 104, the coordinator 20 works with the buyer 10 to prepare a Request for Quotation ("RFQ") 54. The coordinator 20 collects and maintains the RFQ data provided by buyer 10, and then publishes the RFQ 54, and manages the published RFQ 54. The RFQ 54 includes specifications 50 for all of the parts 52 covered by the RFQ 54. In the RFQ 54, buyer 10 aggregates similar part or commodity line items into job "lots." These lots allow suppliers 30 to bid on that portion of the business for which they are best suited.

25

30

During the auction 56, bids 58 will be taken against individual lots (and their constituent parts 52) within RFQ 54. While suppliers 30 must submit actual unit prices for all line items, the competition in an Auction is based on the aggregate value bid for lots. The aggregate value bid for a lot depends upon the level and mix of line item bids and the quantity for each line item. Therefore, suppliers 30 submit bids at the line item level, but compete on the lot level.

35

40

In the Auction Administration phase 106, coordinator 20 coordinates the Auction and administers the Auction setup and preparation. The coordinator 20 sends a RFQ 54 to each participating supplier 30, and assists participating suppliers 30 with preparation for the Auction.

45

50

55

5

10

In the Auction phase 108, suppliers 30 submit bids 58 on the lots and monitor the progress of the bidding by the participating suppliers 30. The coordinator 20 assists, observes, and administers the Auction.

15

20

When the bidding period is over, the auction enters the Auction Results Administration phase 110. In this phase, coordinator 20 analyzes and administers the Auction results, which are viewed by buyer 10. The buyer 10 begins to conduct final qualification of the low bidding supplier(s). The buyer 10 retains the right not to award business to a low bidding supplier 30 based on final qualification results or other business concerns.

25

10 In the ensuing Contract Administration phase 112, the coordinator 20 facilitates settlements 60 awarded by the buyer 10 to suppliers 30. Contracts 52 are then drawn up between buyer 10 and suppliers 30.

30

#### Communications and Software

35

40

15 The Auction is conducted electronically between potential suppliers 30 at their respective remote sites and the coordinator 20 at its site. As shown in Figs. 3 and 4, information is conveyed between the coordinator 20 and the suppliers 30 via a communications medium such as a network service provider 40 accessed by the participants through, for example, dial-up telephone connections using modems, or direct network connections. A computer software application is used to manage the Auction. The software application has two components: a client component 31 and a server component 23. The client component 31 operates on a computer at the site of each of the potential suppliers 30. The client component is used by

45

50

55

5 suppliers 30 to make bids during the Auction. The bids are sent via the network  
service provider 40 to the site of the coordinator, where it is received by the server  
10 component 23 of the software application. The client component 31 includes  
software used to make a connection through telephone lines or the Internet to the  
5 server component 23. Bids 58 are submitted over this connection and updates are  
15 sent to connected suppliers.

Bids 58 can only be submitted using the client component 31 of the  
20 application – this ensures that buyers do not circumvent the bidding process, and  
that only invited suppliers participate in the bidding. Typically, bidders can see  
10 their bids and bids placed by other suppliers for each lot on the client component  
25 31. When a bidder submits a bid, that bid is sent to the server component 23 and  
evaluated to determine whether the bid is from an authorized bidder, and whether  
the bid has exceeded a pre-determined maximum acceptable price. Bids placed  
30 by a supplier are broadcast to all connected bidders thereby enabling every  
15 participating bidder to see quickly the change in market conditions and begin  
35 planning their competitive responses.

### **Summary of the Invention**

40 Traditional online auctions focus on price as the sole variable upon which  
20 the online competition is based. Price is the sole bidding parameter that is  
provided by the bidders and hence is the sole parameter upon which a selection  
45 process is made. Relative valuations between different bid prices can be based on  
a simple comparison of the relative magnitude of the submitted bids.

5

10

15

20

10

25

The present invention creates a market of competition in transactions that are global in nature. Bidders in foreign countries often desire to participate in industrial auctions that originate in the United States. More generally, bidders in foreign countries often desire to participate in auctions that originate outside of their own country. The foreign bidders are placed at a significant disadvantage because of their relative unfamiliarity of valuations in other currencies. The present invention enables bidders to specify bids in any foreign currency. These foreign currency bids are compared by an originator of the auction using a transformation process that converts foreign currency bids into a base currency (e.g., U.S. dollars). The transformation process enables an apples-to-apples comparison of bids that otherwise could not be compared.

30

15

35

The present invention also enables bidders to view an ongoing auction in their own currency context based upon their selected local currency. This supplier-context viewing feature is enabled through the detransformation of all submitted bids into individual supplier contexts. Through the detransformation process, each bidder can simultaneously view a relative comparison of bids in their own context.

#### **Brief Description of the Drawings**

40

20

45

The accompanying drawings, which are included to provide a further understanding of the invention and are incorporated in and constitute a part of this specification, illustrate embodiments of the invention that together with the description serve to explain the principles of the invention.

In the drawings:

50

55

5

Fig. 1 illustrates the elements and entities involved in an auction process;

10

Fig. 2 illustrates the tasks performed by the entities involved in an auction process;

15

Fig. 3 illustrates the communications links between the coordinator and the potential suppliers in an auction;

20

Fig. 4 illustrates the client and server components of the computer software application that conducts the auction and the hardware at the sites of the coordinator and the potential suppliers on which the client and server components operate;

10

Fig. 5 illustrates a bid transformation function; and

25

Figs. 6A-6C illustrate bid history charts based upon buyer and supplier viewpoints.

30

### **Detailed Description**

15

Reference will now be made in detail to the preferred embodiments of the present invention, examples of which are illustrated in the accompanying drawings. The present invention described below extends the operation of the inventive auction system and method described in greater detail in co-pending Application No. \_\_\_\_\_, entitled "Method and System for Conducting Electronic Auctions," filed February 19, 1999, the disclosure of which is hereby expressly incorporated in the present application.

45

Online electronic auctions provide a powerful interactive medium for creating and capitalizing upon traditional auction dynamics. The extensive reach of online

50

55

5

electronic auctions combined with inherent forms of anonymity make it an attractive choice for virtually any auction sale.

10

Online electronic auctions enable potential bidders to view a rapidly changing auction landscape as hundreds of bids can easily be processed within a few hours. Traditional auction dynamics often dictate that bidding accelerates as the closing of the auction approaches.

15

20

Participation within an auction is necessarily strategic in nature. A successful bidder typically has a game plan that is based upon a personal valuation of the auction item (e.g., collectible item, supply contract, etc.). A proper execution of that bidding strategy will determine whether the bidder has bought or sold the auction item at an acceptable price level.

25

30

A key element to the attractiveness of online electronic auctions is the bidder's ability to monitor the auction. As conventional auctions are based upon a single price parameter, comparison of the submitted bids is based simply on the relative magnitude of the submitted bids. Various bid history graphs can be used to illustrate the historical progress of bidding within the auction. The historical progress will illustrate in some form the downward or upward movement in the auction market as new market leading bids are submitted.

35

40

Keeping abreast of the auction market requires an accurate perception of the market. Online electronic auctions are advantageous because of their ability to broadcast bid price information to potential bidders. Through this broadcast mechanism, each of the bidders is able to re-create the same view of the dynamic auction market. This feature of online electronic auctions is critical because it

45

50

55

5

ensures that no bidder is placed at a disadvantage for having an inaccurate assessment of the current market condition.

10

The creation of a level playing field is a general goal of online electronic auction systems. Improvements of online electronic auctions are typically focused

15

on ensuring consistency and commonality between the various potential bidders.

15

After all, a perceived disadvantage by one or more bidders will quickly eliminate the attractiveness of the electronic online auction. This results because online

20

auctions are designed to provide equal amounts of information to bidders who cannot rely on their physical presence at the auction.

10

The present invention recognizes that the creation of a common view into the auction market may not be advantageous or efficient. In some instances, the creation of a different view into the auction market is desired by one or more bidders.

25

30

For example, consider downward-price online industrial auctions. Like most

15

online electronic auctions, the downward-price online industrial auction is typically

35

based upon the submission of bid prices by the various suppliers. The relative

attractiveness of the submitted bid prices is predominantly based upon the

difference in price. Significantly, bid prices are conventionally submitted in a

40

common currency (e.g., U.S. dollars). Each of the bidders submits a U.S. dollar bid

20

price to the auction server and receives, from the auction server, U.S. dollar bid

prices that have been submitted by their competitors. This commonality enables

45

the buyer as well as the potential suppliers to have a common view of the ranking of bids.

50

55

5

10

This common view of the ranking of submitted bids has traditionally been viewed as a necessary consequence of implementing an interactive online auction process wherein bid values are to be compared in real-time to each other. The submission of common currency bids enables the auction system to present an apples-to-apples comparison of the submitted bids.

15

20

In industrial electronic online auction markets, bidders often reside in countries other than the United States. This fact alone is evidence of the extensive reach of the electronic online auction. Participants in foreign countries who choose to participate in an electronic online auction are often at a disadvantage. Although they may be submitting bids in U.S. dollars, they are not accustomed to relative valuations in U.S. dollars. Rather, valuations only have meaning when converted into their own local currency (e.g., Japanese Yen, Swiss Francs, Deutsche Marks, etc.).

25

30

During the auction process, bidders in foreign countries must conceptualize the market leading bids in their own local currency. The prospect of visualizing relative valuations of a foreign currency is taxing enough without considering the pressures inherently introduced through traditional auction dynamics. In particular, during the "heat" of an auction, a bidder in a foreign country may miscalculate the value of the market leading bid as compared to a floor (or ceiling) that he estimated in his local currency. This miscalculation would cause him to submit a new market leading bid that was below (or above) his walk-away price. In a sense, that miscalculation is the price he paid for his willingness to compete on an even playing field based upon U.S. dollars. Ideally, each of the potential suppliers in a

35

40

20

45

50

55



foreign country would be able to participate in an auction that is conducted in their own local currency.

It is a feature of the present invention that bids submitted in various local currencies can be effectively compared by an auction system. It is a further feature of the present invention that each participant in the auction can maintain a separate view of the auction status based upon their own particular context. This bidder-specific context viewing feature allows each bidder to participate in an auction that appears to be conducted in his own local currency.

These and other features of the present invention are enabled through a transformation process that is implemented by the auction server component and/or the client component. General transformation bidding is described in greater detail in co-pending Application No. \_\_\_\_\_, entitled "Method and System for Conducting Electronic Auctions with Multi-Parameter Price Equalization Bidding," filed concurrently herewith, the disclosure of which is hereby expressly incorporated in the present application.

The transformation process can be illustrated by the generic transformation mechanism illustrated in Fig. 5. As illustrated, bid transformation 500 represents a function (f) that is operative on input variables (x) and  $(a_1..a_n)$ . In the context of downward-based industrial auctions, input variables  $(a_1..a_n)$  represent non-comparative bid parameters, while input variable (x) represents a supplier comparative bid parameter. The output of bid transformation 500 is the buyer comparative bid parameter (y).

5

10

15

20

10

25

30

15

35

40

20

45

50

55

In the generic description of the transformation process in Fig. 5, two types of comparative bid parameters exist. A buyer comparative bid parameter (y) refers to a parameter (e.g., base currency price), resulting from the transformation process, upon which the buyer will compare competing bids. A supplier comparative bid parameter (x), on the other hand, is an input to the transformation function. The supplier comparative bid parameter (x) can be used by a supplier to compare competing bids in the supplier's context.

As noted, non-comparative bid parameters are also used as inputs to the transformation process. Unlike supplier comparative bid parameters, non-comparative bid parameters (e.g., non-price parameters) are not directly used to compare competing bids.

In this transformation framework, a supplier comparative bid parameter value can be modified by the transformation process based upon non-comparative bid parameter values to yield a buyer comparative bid parameter value.

Applied to the scenario where bids in multiple currencies are desired to be submitted, the local currency of a supplier (e.g., Yen) represents a supplier comparative bid parameter. The exchange rate between the local currency and the base currency (e.g., U.S. dollars) represents a non-comparative bid parameter. The non-comparative bid parameter is provided by the buyer or retrieved from a known source of exchange rates prior to the start of the auction.

In this framework, the supplier's bid is a single supplier comparative bid parameter (i.e., local currency price) to be transformed into a buyer comparative

5 bid parameter (i.e., base currency price) using a non-comparative bid parameter  
(i.e., exchange rate).

10 In multi-currency bidding, the exchange rates are not confidential.  
Accordingly, the transformation process can be performed at the client component  
5 and/or the auction server component. For example, assume that Supplier A is  
15 bidding in Japanese Yen, Supplier B is bidding in Swiss Francs, and the buyer is  
viewing the auction in U.S. dollars.

20 Ultimately, the buyer desires to view the submitted bids in U.S. dollars. To  
facilitate the buyer view, the foreign currency bids are transformed prior to  
10 presentation to the buyer. Various implementations are possible. In one  
25 implementation, the client component of the foreign supplier is designed to submit  
bids in the local currency of the foreign supplier. In this case, it would be the  
responsibility of the auction server component to transform the local currency bid  
30 into the base currency. Alternatively, the client component of the foreign supplier  
can be designed to submit bids in the base currency of the buyer. In this case, it  
15 would be the responsibility of the client component to transform the local currency  
35 bid input by the foreign supplier into the base currency prior to transmission to the  
auction server. To support this transformation function, the client component of the  
40 foreign supplier knows the target base currency and also has access to the  
20 appropriate exchange rate.

45 After each of the submitted bids have been transformed into the supplier  
comparative bid parameter (U.S. dollars), an "apples-to-apples" comparison can be  
performed. The "apples-to-apples" comparison can be effected in any of a variety

5 of ways including the bid history chart of Fig. 6A. The bid history chart of Fig. 6A illustrates a relative ranking of transformed received bids in U.S. dollars.

10 - Having received a bid from a potential supplier, the auction server must then broadcast the received bid to the other participating suppliers. This broadcast  
5 function creates a real-time online competition between suppliers who are able to  
15 view the activities of their competitors and plan their corresponding response strategy.

20 As noted, the local currency bid is referred to as the supplier comparative bid parameter. As illustrated in Fig. 5, the supplier comparative bid parameter is  
10 one of the inputs (x) into the bid transformation function (f). The supplier  
25 comparative bid parameter is significant because it enables the supplier to view the auction competition in his own context. In other words, a supplier can view all competing bids as if the other suppliers were all bidding in their own local currency.  
30 In this manner, a supplier can view the competitive auction landscape in his own  
15 context.

35 In one embodiment, the transformation process can be implemented as a linear function having a single multiplicative factor. This transformation can be represented by the relation  $y = mx$ , where m is the exchange rate, x is the local  
40 currency chosen by the foreign supplier, and y is the base currency chosen by the  
20 buyer. In an alternative embodiment, the linear transformation function can be implemented as a linear function having a multiplicative factor and an additive  
45 factor. In this embodiment, the additive factor is used to handicap or discount the transaction cost between currencies.

5

10

15

20

25

30

35

40

45

50

55

Bids viewed in the buyer's context have been converted into the buyer comparative bid parameter (i.e., U.S. dollars). On the supplier side, each of the bids submitted from other participating suppliers are detransformed from the buyer comparative bid parameter into the supplier comparative bid parameter. This detransformation is based upon the formula  $x = y/m$ . In this detransformation process, U.S. dollar bid values that are to be broadcast to Supplier A are converted to Supplier A's local currency using the appropriate exchange rate.

After Supplier A receives the detransformed bid values, Supplier A is then able to display a relative comparison of the bids in his own local currency. This relative comparison corresponds to the relative comparison of the bids in the buyer context. Fig. 6B illustrates a bid history chart in the context of Supplier A. In this example, it is assumed that Supplier A's local currency is French Francs, and the conversion rate is  $\$1 = \text{FF}5.60$ . This conversion rate results in a multiplicative factor  $m = 1/5.60 = 0.1786$ .

From Supplier A's perspective, all other suppliers appear to be bidding in French Francs. With this view into the auction landscape, Supplier A can comfortably estimate the market leading bids relative to his own walk-away price. No mental translation of U.S. dollars to French Francs is required by Supplier A. If Supplier A decides to beat the market leading bid, Supplier A would simply reduce his French Francs bid and submit the new bid (e.g., bid of FF 8,924,194 bid at 02:18:29) to the auction server. The new French Francs bid would then be transformed into U.S. dollars, i.e.,  $y = mx = \text{FF } 8,924,194 * 0.1786 = \$1,593,606$ ,

5 using the multiplicative factor defined by the French Franc to U.S. dollar exchange rate

10 In a similar manner, Supplier B can also view the competitive climate of the auction in his own local currency. Supplier B's view is illustrated in Fig. 6C. In this  
5 example, it is assumed that Supplier B is bidding in Deutsche Marks with an  
15 exchange rate of \$1 = DM1.70. This conversion rate results in a multiplicative factor  $m = 1/5.60 = 0.5882$ . In Supplier B's view, Supplier A's new transformed bid of \$1,593,606 at 02:18:29 is fed back to Supplier B as a DM 2,709,130 bid, i.e.,  $x = y/m = 1,593,606/0.5882 = 2,709,130$ , using the multiplicative factor defined for the  
20 Deutsche Mark to U.S. dollar exchange rate.  
10

25 In combination, Figs. 6A-6C illustrate a feature of the present invention that enables each supplier to view the auction in his own context. These buyer-specific and supplier-specific contexts enable the system to create a multi-currency bidding  
30 market.

15 Ultimately, the foreign supplier desires to view the submitted bids in his own local currency. To facilitate the supplier's view, the U.S. dollar bids must be  
35 transformed prior to presentation to the foreign supplier. Various implementations are possible. In one implementation, the auction server component can be  
40 designed to transmit bids in the local currency of the foreign supplier. In this case,  
20 it would be the responsibility of the auction server component to transform the base currency bid into a local currency bid. It should be noted that a bid submitted in a  
45 first local currency could also be converted directly into a second local currency by the auction server component.

5

10

15

20

Alternatively, the client component of the foreign supplier can be designed to receive bids in the base currency of the buyer. In this case, it would be the responsibility of the client component to transform the received base currency bid into the local currency of the foreign supplier. To support this transformation function, the client component of the foreign supplier must have access to the appropriate exchange rate. It should be noted again that a bid received by the foreign supplier in another local currency could also be converted directly into the supplier's own local currency by the client component.

25

30

While the invention has been described in detail and with reference to specific embodiments thereof, it will be apparent to one skilled in the art that various changes and modifications can be made therein without departing from the spirit and scope thereof. In particular, it should be noted that while the auction functions described above have been described in the context of downward pricing auctions the auction functions can be equally applied to upward pricing auctions. Thus, it is intended that the present invention cover the modifications and variations of this invention provided they come within the scope of the appended claims and their equivalents.

40

45

50

55

# Claims

5

10

15

20

25

30

35

40

45

50

55



5

WHAT IS CLAIMED IS:

10

1. A method of conducting an electronic online auction between a plurality of potential bidders, the plurality of potential bidders competing for a lot having at least one product, at least one of the plurality of potential bidders specifying bids in a currency different from a currency of an originator of the auction, comprising the steps of:

15

5

20

- (a) receiving a first bid in a first local currency from a first bidder;
- (b) transforming said first bid in said first local currency into a base currency using a pre-defined exchange rate, said base currency being used by the originator of the auction to effect a relative comparison of submitted bids based on said base currency; and
- (c) transmitting bid information reflective of said first bid to a second bidder to enable said second bidder to view a relative comparison of submitted bids in a second local currency.

25

10

30

35

2. The method of claim 1, wherein step (c) comprises the step of transmitting said transformed first bid in said base currency to said second bidder.

40

3. The method of claim 1, further comprising the step of (d) generating a second bid in said second local currency using a second pre-defined exchange rate, said second bid in said second local currency having an equivalent value to

45

50

55

5  
said first bid in said first local currency, and wherein step (c) comprises the step of  
5 transmitting said second bid to said second bidder.

10  
4. The method of claim 3, wherein step (d) comprises the step of  
converting said transformed first bid in said base currency to a second bid in said  
15 second local currency of said second bidder.

20  
5. The method of claim 3, wherein step (d) comprises the step of  
10 converting said first bid in said first local currency to a second bid in said second  
local currency of said second bidder.

25  
6. A method of conducting an electronic online auction between a  
plurality of potential bidders, the plurality of potential bidders competing for a lot  
30 having at least one product, at least one of the plurality of potential bidders  
specifying bids in a currency different from a currency of an originator of the  
5 auction, comprising the steps of:  
35  
(a) receiving a first bid from a first bidder, said first bid being used by an  
originator of the auction in the generation of a relative comparison of  
40 submitted bids based on a base currency;  
(b) generating a second bid in a first local currency using a pre-defined  
10 exchange rate, said second bid in said first local currency having an  
45 equivalent value to said first bid; and

5

10

15

- (c) transmitting said second bid in said first local currency to a second bidder, thereby enabling said second bidder to view a relative comparison of submitted bids in said first local currency of said second bidder.

15

7. The method of claim 6, wherein step (a) comprises the step of receiving a first bid in a base currency from a first bidder.

20

8. The method of claim 6, wherein step (a) comprises the step of receiving a first bid in a second local currency, and further comprising the step of (d) converting said first bid in said second local currency into a base currency.

25

30

9. A method of participating an electronic online auction between a plurality of potential bidders, the plurality of potential bidders competing for a lot having at least one product, at least one of the plurality of potential bidders specifying bids in a currency different from a currency of an originator of the auction, comprising the steps of:

35

5

40

45

10

- (a) specifying, by a first bidder, a first bid in a first local currency;
- (b) transforming said first bid in said first local currency into a base currency using a pre-defined exchange rate, said base currency being used by the originator of the auction to effect a relative comparison of submitted bids based on said base currency;
- (c) transmitting said transformed first bid to an auction server;

50

55

5

(d) receiving bid information reflective of a second bid submitted by a second bidder to said auction server; and

10

(e) generating a relative comparison of bids submitted to said auction

15

server using said received bid information, said relative comparison of submitted bids being based on said first local currency.

15

10. The method of claim 9, wherein step (d) comprises the step of receiving a bid in said base currency, and further comprising the step of (f) converting said received bid in said base currency into said first local currency using a second pre-defined exchange rate.

25

11. The method of claim 9, wherein step (d) comprises the step of receiving a bid in a second local currency, and further comprising the step of (f) converting said received bid in said second local currency into said first local currency using a second pre-defined exchange rate.

35

12. A method of participating in an electronic online auction between a plurality of potential bidders, the plurality of potential bidders competing for a lot having at least one product, at least one of the plurality of potential bidders specifying bids in a currency different from a currency of an originator of the auction, comprising the steps of:

45

(a) specifying, by a first bidder, a first bid in a first local currency;

50

55

5

10

10

15

20

15

25

30

35

40

45

50

55

- (b) transmitting first bid information reflective of said first bid to an auction server, said first bid information being used by an originator of the auction in the generation of a relative comparison of submitted bids based on a base currency;
- (c) receiving second bid information reflective of a second bid submitted by a second bidder to said auction server;
- (d) generating a third bid in said first local currency using said received second bid information, said third bid in said first local currency having an equivalent value to said second bid; and
- (e) generating a relative comparison of bids submitted to said auction server, said relative comparison of submitted bids being based on said first local currency.

13. The method of claim 12, further comprising the step of (f) transforming said first bid in said first local currency into a base currency using a pre-defined exchange rate, and wherein step (b) comprises the step of transmitting said transformed first bid in said first local currency to said auction server.

14. The method of claim 12, wherein step (c) comprises the step of receiving a bid in a base currency, and wherein step (d) comprises the step of converting said received bid in said base currency into a third bid in said first local currency using a pre-defined exchange rate.

5

10

15. The method of claim 12, wherein step (c) comprises the step of receiving a bid in a second local currency, and wherein step (d) comprises the step of converting said received bid in said second local currency into a third bid in said first local currency using a pre-defined exchange rate.

15

20

5

16. A system for conducting an electronic online auction between a plurality of potential bidders, the plurality of potential bidders competing for a lot having at least one product, at least one of the plurality of potential bidders specifying bids in a currency different from a currency of an originator of the auction, comprising:

25

means for receiving a first bid in a first local currency from a first bidder;

30

means for transforming said first bid in said first local currency into a base currency using a pre-defined exchange rate, said base currency being used by the originator of the auction to effect a relative comparison of submitted bids based on said base currency; and

10

35

means for transmitting bid information reflective of said first bid to a second bidder to enable said second bidder to view a relative comparison of submitted bids in a second local currency.

40

45

17. The system of claim 16, wherein said transmitted bid information is said transformed first bid in said base currency.

50

55

5

10

15

18. The system of claim 16, further comprising means for generating a second bid in said second local currency using a second pre-defined exchange rate, said second bid in said second local currency having an equivalent value to said first bid in said first local currency, and wherein said transmitted bid information is said second bid.

20

19. The system of claim 18, wherein said means for generating converts said transformed first bid in said base currency to a second bid in said second local currency of said second bidder.

25

20. The system of claim 18, wherein said means for generating converts said first bid in said first local currency to a second bid in said second local currency of said second bidder.

30

35

40

21. A system for conducting an electronic online auction between a plurality of potential bidders, the plurality of potential bidders competing for a lot having at least one product, at least one of the plurality of potential bidders specifying bids in a currency different from a currency of an originator of the auction, comprising the steps of:

45

means for receiving a first bid from a first bidder, said first bid being used by an originator of the auction in the generation of a relative comparison of submitted bids based on a base currency;

50

55

5

means for generating a second bid in a first local currency using a pre-  
defined exchange rate, said second bid in said first local currency having an  
equivalent value to said first bid; and

10

15

means for transmitting said second bid in said first local currency to a  
second bidder, thereby enabling said second bidder to view a relative comparison  
of submitted bids in said first local currency of said second bidder.

20

22. The system of claim 21, wherein said first bid is in a base currency.

25

23. The system of claim 21, wherein said first bid is in a second local  
currency, and further comprising means for converting said first bid in said second  
local currency into a base currency.

30

24. A computer program product for enabling a processor in a computer  
system to process bidding information in an auction between a plurality of bidders,  
said computer program product comprising:

35

a computer usable medium having computer readable program code means  
embodied in said medium for causing an application program to execute on the  
computer system, said computer readable program code means comprising

40

a first computer readable program code means for enabling the  
computer system to specify a first bid in a first local currency;

45

a second computer readable program code means for enabling the  
computer system to transform said first bid in said first local currency into a

10

50

55



5

base currency using a pre-defined exchange rate, said base currency being used by the originator of the auction to effect a relative comparison of submitted bids based on said base currency;

10

a third computer readable program code means for enabling the computer system to transmit said transformed first bid to an auction server;

15

15

a fourth computer readable program code means for enabling the computer system to receive bid information reflective of a second bid submitted by a second bidder to said auction server; and

20

a fifth computer readable program code means for enabling the computer system to generate a relative comparison of bids submitted to said auction server using said received bid information, said relative comparison of submitted bids being based on said first local currency.

20

25

30

25. The computer program product of claim 24, wherein said received bid information is a bid in said base currency, and further comprising computer readable program code means for enabling the computer system to generate convert said received bid in said base currency into said first local currency using a second pre-defined exchange rate.

35

5

40

26. The computer program product of claim 24, wherein said received bid information is a bid in a second local currency, and further comprising computer readable program code means for enabling the computer system to convert said

45

50

55

5  
received bid in said second local currency into said first local currency using a  
5 second pre-defined exchange rate.

10  
27. A computer program product for enabling a processor in a computer  
system to process bidding information in an auction between a plurality of bidders,  
15 said computer program product comprising:

a computer usable medium having computer readable program code means  
20 5 embodied in said medium for causing an application program to execute on the  
computer system, said computer readable program code means comprising

a first computer readable program code means for enabling the  
25 computer system to specify a first bid in a first local currency;

a second computer readable program code means for enabling the  
10 computer system to transmit first bid information reflective of said first bid to  
an auction server, said first bid information being used by an originator of  
the auction in the generation of a relative comparison of submitted bids  
35 based on a base currency;

a third computer readable program code means for enabling the  
15 computer system to receive second bid information reflective of a second  
bid submitted by a second bidder to said auction server;

a fourth computer readable program code means for enabling the  
45 computer system to generate a third bid in said first local currency using  
said received second bid information, said third bid in said first local  
20 currency having an equivalent value to said second bid; and

5

a fifth computer readable program code means for enabling the computer system to generate a relative comparison of bids submitted to said auction server, said relative comparison of submitted bids being based on said first local currency.

10

15

28. The computer program product of claim 27, further comprising computer readable program code means for enabling the computer system to transform said first bid in said first local currency into a base currency using a pre-defined exchange rate, and wherein said transmitted first bid information is said transformed first bid in said first local currency.

20

5

25

29. The computer program product of claim 27, wherein said received second bid information is a bid in a base currency.

30

30. The computer program product of claim 27, wherein said received second bid information is a bid in a second local currency.

35

31. A computer program product for enabling a processor in a computer system to process bidding information in an auction between a plurality of bidders, said computer program product comprising:

40

a computer usable medium having computer readable program code means embodied in said medium for causing an application program to execute on the computer system, said computer readable program code means comprising

45

5

50

55

5

a first computer readable program code means for enabling the computer system to receive a first bid in a first local currency from a first bidder;

10

10

a second computer readable program code means for enabling the computer system to transform said first bid in said first local currency into a base currency using a pre-defined exchange rate, said base currency being used by the originator of the auction to effect a relative comparison of submitted bids based on said base currency; and

15

20

15

a third computer readable program code means for enabling the computer system to transmit bid information reflective of said first bid to a second bidder to enable said second bidder to view a relative comparison of submitted bids in a second local currency.

25

30

20

32. A computer program product for enabling a processor in a computer system to process bidding information in an auction between a plurality of bidders, said computer program product comprising:

35

a computer usable medium having computer readable program code means embodied in said medium for causing an application program to execute on the computer system, said computer readable program code means comprising

40

25

a first computer readable program code means for enabling the computer system to receive a first bid from a first bidder, said first bid being used by an originator of the auction in the generation of a relative comparison of submitted bids based on a base currency;

45

50

55

5

a first computer readable program code means for enabling the  
computer system to generate a second bid in a first local currency using a  
pre-defined exchange rate, said second bid in said first local currency  
having an equivalent value to said first bid; and

15

a first computer readable program code means for enabling the  
computer system to transmit said second bid in said first local currency to a  
second bidder, thereby enabling said second bidder to view a relative  
comparison of submitted bids in said first local currency of said second  
bidder.

25

30

35

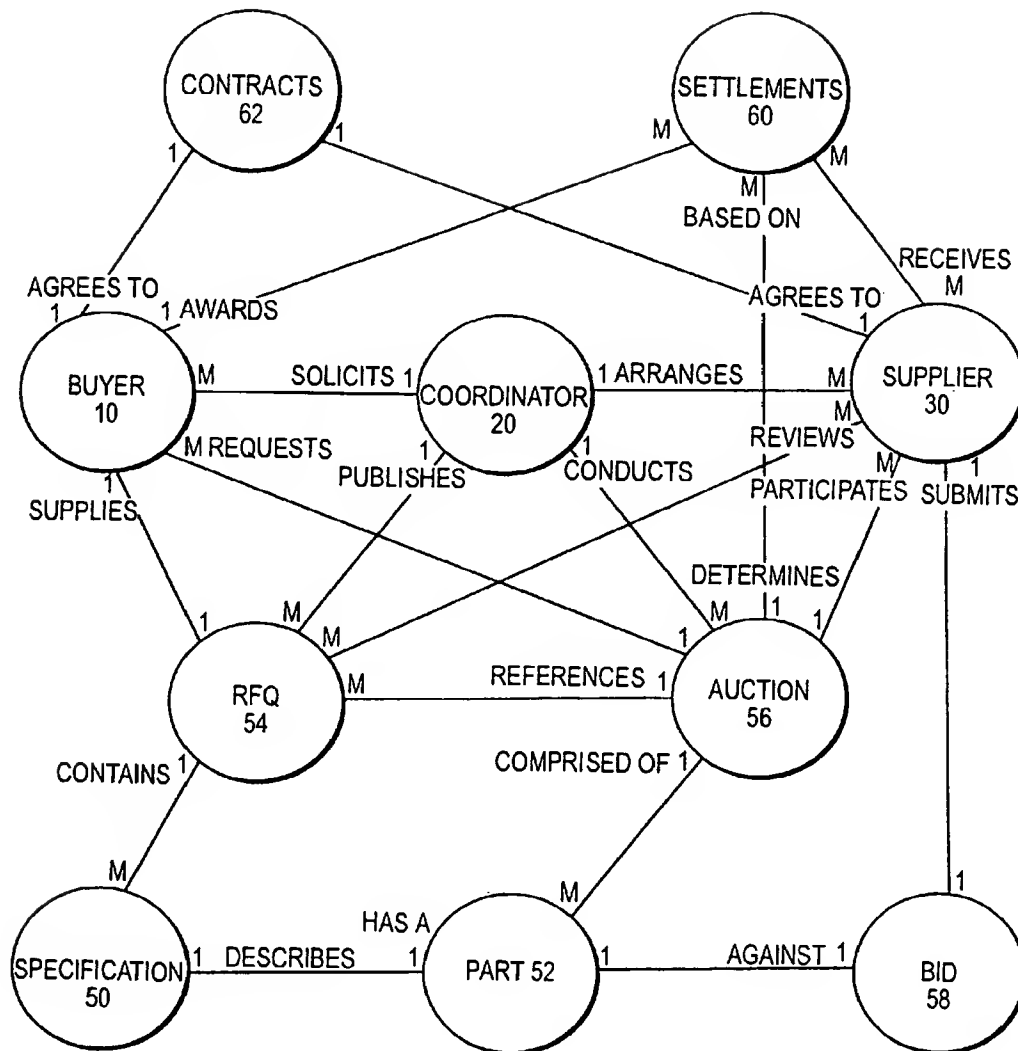
40

45

50

55

1/6

**FIG. 1**

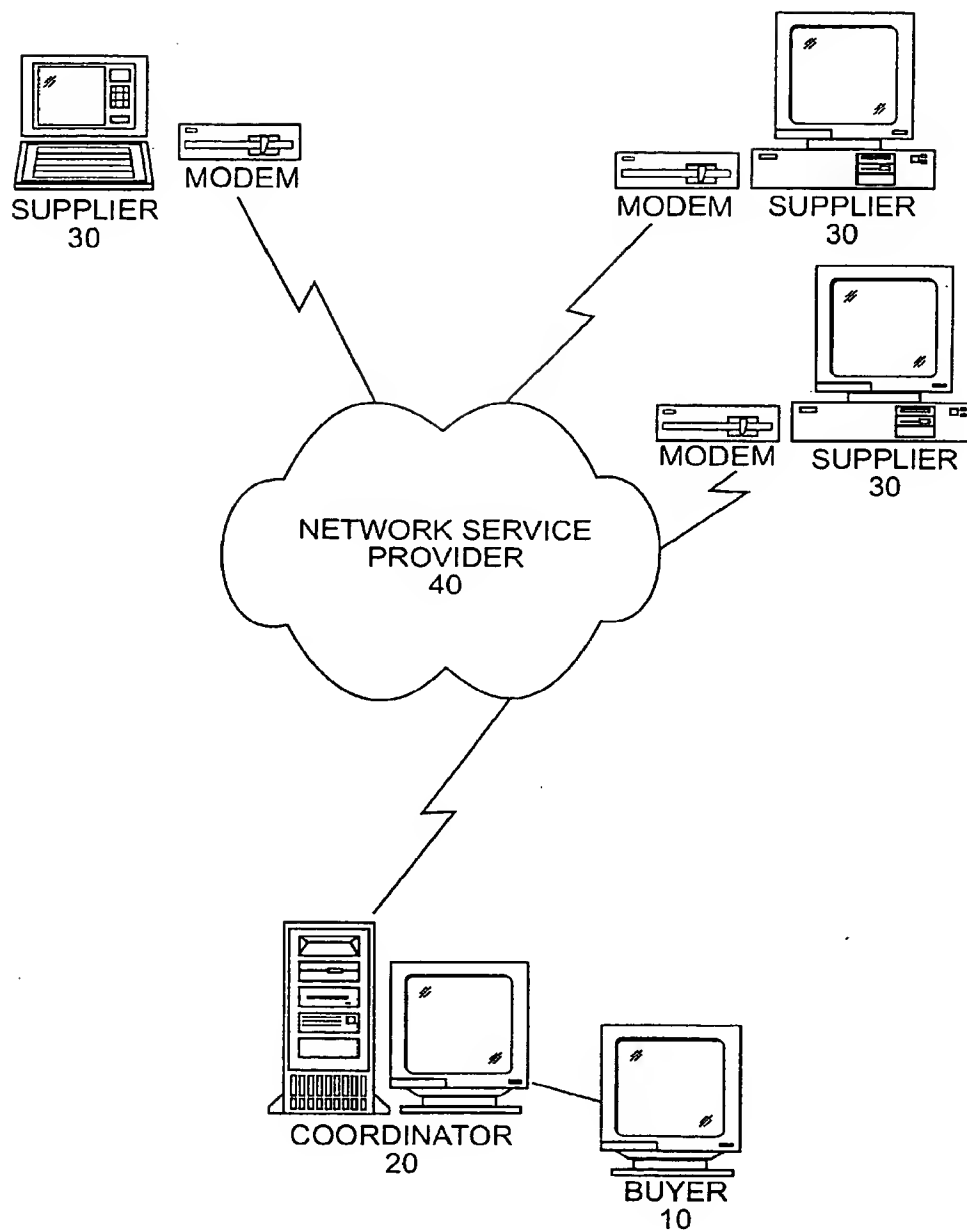
SUBSTITUTE SHEET (RULE 26)

2/6

	COORDINATOR	BUYER	SUPPLIER
INITIAL CONTACT 102	CONTACT BUYER	PROVIDE DATA	
RFQ 104	COLLECT & ADMINISTER RFQ DATA	PROVIDE RFQ DATA	
	PUBLISH & ADMINISTER RFQ		ACCESS RFQ
	MANAGE RFQ RESPONSE		RESPOND TO RFQ
AUCTION ADMINISTRATION 106		REQUEST AUCTION	
	COORDINATE & ADMINISTER AUCTION SETUP		
	ASSIST & ADMINISTER USER AUCTION PREP		PREPARE FOR AUCTION
CONDUCT AUCTION 108	ASSIST & ADMINISTER AUCTION	OBSERVE	BID
ADMINISTER AUCTION RESULTS 110	ANALYZE & ADMINISTER AUCTION RESULTS	VIEW AUCTION RESULTS	VIEW AUCTION RESULTS
CONTRACT ADMINISTRATION 112		SETTLEMENT	SETTLEMENT

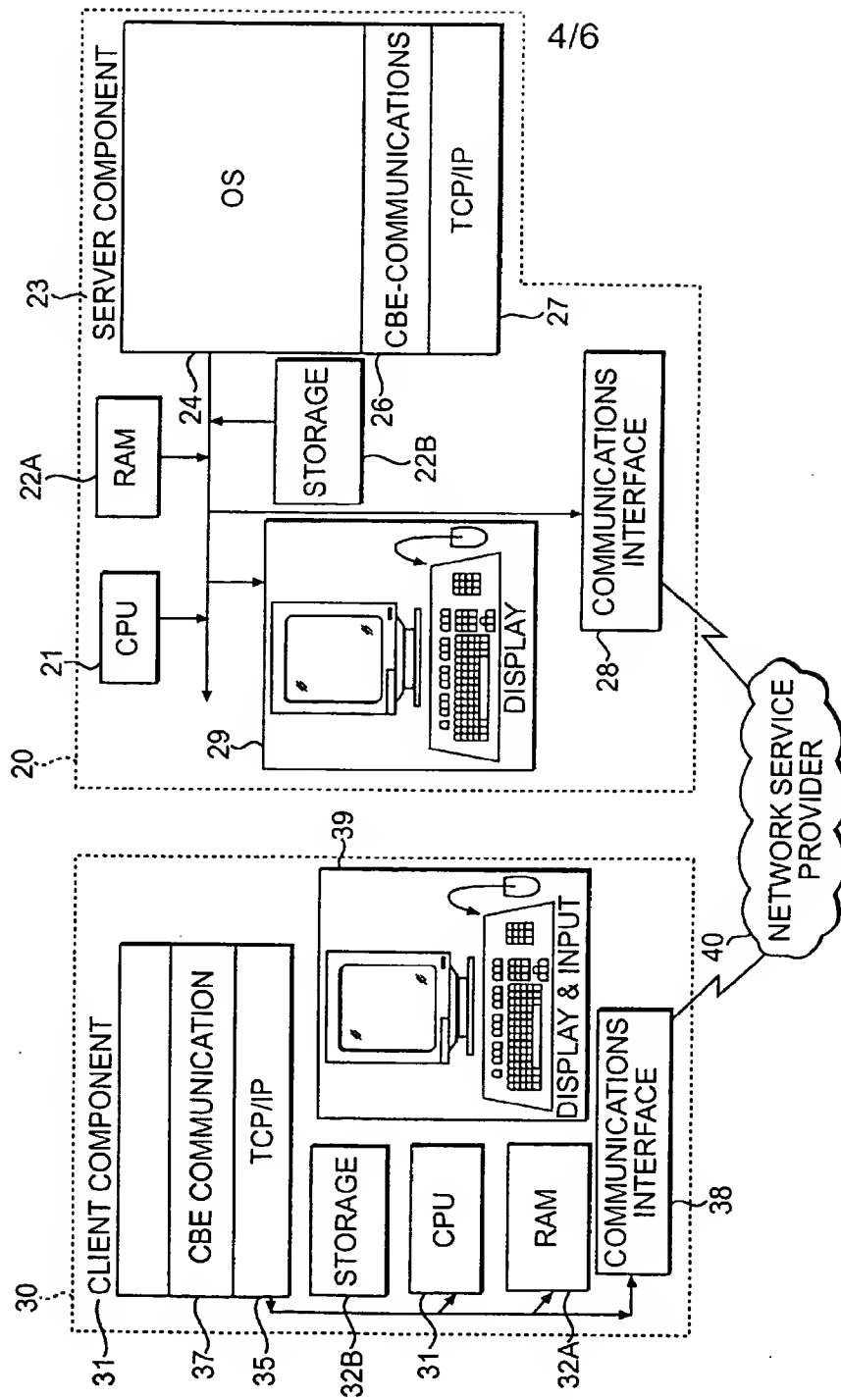
**FIG. 2****SUBSTITUTE SHEET (RULE 26)**

3/6

**FIG. 3**

SUBSTITUTE SHEET (RULE 26)

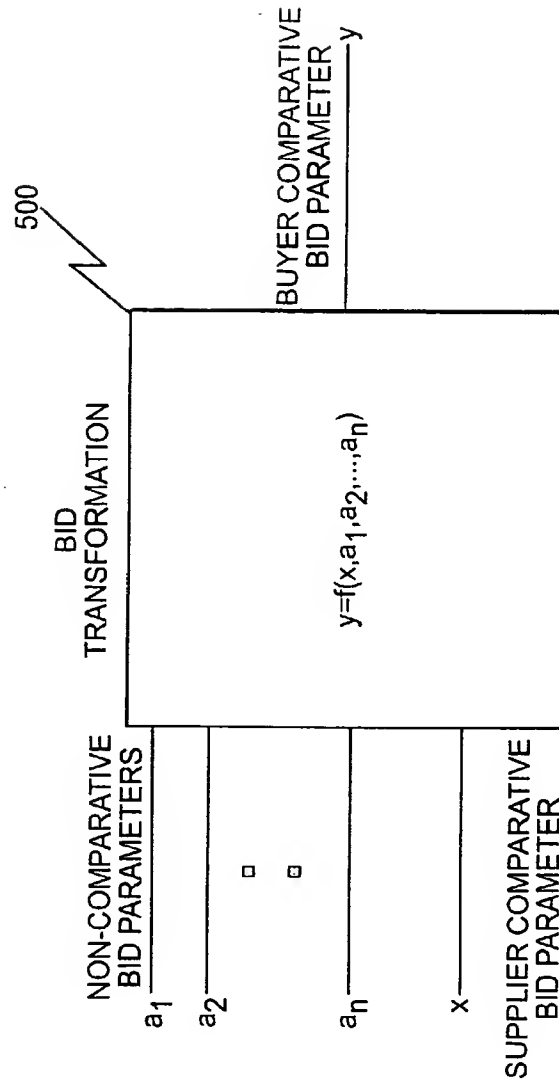




4/6

FIG. 4

5/6



**FIG. 5**

6/6

## BUYER VIEW

BIDDER	BID TIME	BID
SUP A	02:03:38	\$1,674,479
SUP B	02:06:47	\$1,608,031
SUP C	02:10:09	\$1,604,368
SUP A	02:18:29	\$1,593,606

**FIG. 6A**

## SUPPLIER A VIEW (FRANCE)

BIDDER	BID TIME	BID
SUP A	02:03:38	FF 9,377,082
SUP B	02:06:47	FF 9,004,974
SUP C	02:10:09	FF 8,984,461
SUP A	02:18:29	FF 8,924,194

**FIG. 6B**

## SUPPLIER B VIEW (GERMANY)

BIDDER	BID TIME	BID
SUP A	02:03:38	DM 2,846,614
SUP B	02:06:47	DM 2,733,653
SUP C	02:10:09	DM 2,727,426
SUP A	02:18:29	DM 2,709,130

**FIG. 6C**